Detailed Technical Specification for Electrical Rubber Insulating Hand Gloves

1.0 SCOPE

This specification covers the design, manufacture, testing, and supply of Natural Rubber Insulating Hand Gloves **meant for Live Working** for Electrical Purposes.

2.0 Applicable Standards:

IS 13774:2021 with latest revision/amendments/changes adopted and published.

3.0 BIS Standard Mark:

Gloves shall have BIS standard "ISI" mark and manufacturer should possess valid BIS licence as per IS 13774: 2021.

4.0 REQUIREMENTS:

3.1 Composition

The gloves shall be of Class-2, Category-R for use at voltage not exceeding 17000 AC and shall have special properties which is resistant to Acid, Oil and Ozone. Gloves shall be made from good quality Natural Rubber or synthetic rubber or from a mixture there of confirming to IS13774: 2021 with latest revision/amendments/changes adopted and published.

3.2 Construction

Gloves shall be made from latex by dipping. The Natural Rubber Construction of gloves should offer the required di-electrical properties combined with flexibility strength, 100% shock proof and durability applications. The gloves shall be seamless construction and should have smooth finish (inside & outside). The colour of the gloves shall be reddish pink.

3.3 Length, Shape & Size

The minimum internal length from the tip of the second finger to the edge of the cuff shall be 410 mm. The gloves shall be of loose-fitting contoured shape and the recommended size as per Table-2 of IS 13774: 2021 with latest amendments if any.

3.4 Thickness

The thickness of gloves shall meet the requirements specified in clause 4.3.3 of IS 13774: 2021. The gloves shall have smooth surface and shall be free on both inner & outer surfaces from

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visual defects like patches, blisters, porosity, embedded foreign matters or other physical defects.

4.0 WORKMANSHIP and Finish: Shall comply with IS13774: 2021.

5.0 MARKING

I. All the gloves shall be marked indelibly in yellow colour with the following information.

a. Standard IS 13774:2021.
b. Name, Trademark.
c. Month and year of manufacture
d. Lot no. & Unique Serial No compulsory to be available every gloves.
e. Size and type of gloves.
f. Maximum working voltage in volts, followed by the word "working" in brackets and with symbol of double triangle mark for live working.
g. Identification of manufacture.

II. Logo of BESCOM shall be marked in Blue Colour on the other side of the marking of the gloves.

5.1 Packing and instructions for use:

Each pair of gloves shall be packed in re-useable plastic bag with Zip lock and shall comply as per clause 4.7 and 4.8 of IS 13774:2021.

6.0 TESTS & STANDARDS

Lineman Electrical Rubber Insulating Hand Gloves offered shall be manufactured with the same configuration and raw materials as used in the Lineman Electrical Rubber Insulating Hand Gloves for which design and type test reports are submitted. The manufacturer shall submit a certificate for the same. The design and type tests reports submitted shall not be more than 5 years old.

6.1 The following constitute type test as per IS 13774:2021 and has to be carried out at CPRI/ERDA/NABL accredited Govt testing lab for Electrical Gloves.

I. Visual Inspection and Measurements:

a. Class
b. Dimensions
c. Thickness
d. Workmanship and finish

II. Mechanical Tests:

a. Tensile strength shall not be less than 16MPa.
b. Elongation at break shall not be less than 600%.
c. Puncture resistance Test shall be greater than 18N/mm.
d. Tension set

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III. Di-electric Tests

a. Leakage current test at Proof voltage
b. Proof Voltage test
c. Withstand Voltage test

IV. Ageing Test:

V. Thermal Tests:
a. Low Temperature test
b. Flame retardancy test

VI. Tests with special properties
a. Cat A: Acid resistance.
b. Cat H: Oil resistance.
c. Cat Z: Ozone resistance.

6.2 The following constitute Routine Tests.
a. Visual and dimensional verification
b. Thickness test.
c. Proof voltage and leakage current test

6.3 The following tests shall be conducted at the time of inspection:
a. Visual and dimensional verification
b. Thickness test.
c. Tensile strength and ultimate elongation test.
d. Puncture resistance test
e. Proof voltage and leakage current test
f. Withstand voltage test.

The number of samples for acceptance test shall be as per IS 13774: 2021.

7.0 ADDITIONAL TEST

The owner reserves the right to conduct all the tests mentioned in this specification at own expenses on the samples drawn from the site at supplier's premises or at any other test centre. In case of evidence of non-compliance, it shall be binding on the part of the supplier to prove the compliance of the items to the technical specifications by repeat tests or correction of deficiencies or replacement of defective items, all without any extra cost to the owner.

General Manager (Ele)
Quality Standards & Safety,
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